Core Content for Mathematics Assessment
Grade 3 Vertical Alignment – DRAFT 9/23/03

Number/Computation

Concepts - Students will describe properties of, give examples of, and apply to real-world or mathematical situations:

MA-3-1.1.1 Whole numbers 0 – 1,000; use simple fractions to represent equal parts of a whole or a group (halves, thirds, fourths); decimals through hundredths (as related to money)
MA-3-1.1.2 The operations of addition, subtraction, multiplication, and division
MA-3-1.1.3 Odd and even numbers, multiples
MA-3-1.1.4 Place value, expanded form, number magnitude to 1,000; decimals through hundredths as related to money
MA-3-1.1.5 Multiple representations of numbers (e.g., drawings, manipulative, symbols) to 1,000

Skills – Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-3-1.2.1 Read, write, and rename whole numbers in word form, expanded form, and standard form (0-1,000)
MA-3-1.2.2 Multiply through 10 x 10; add/subtract two and three digit numbers; divide two digit numbers by single digit divisors (with or without remainders)
MA-3-1.2.3 Add and subtract fractions with like denominators; add and subtract decimals through hundredths as related to money
MA-3-1.2.4 Skip-count forward and backward by 2's, 5's, 10's, 100's, and 1,000's
MA-3-1.2.5 Apply appropriate strategies to estimate quantities of objects
MA-3-1.2.6 Estimate computational results using an appropriate strategy, but limited to addition and subtraction
MA-3-1.2.7 Determine if a number is odd or even
MA-3-1.2.8 Not assessed
MA-3-1.2.9 Order and compare (>, <, =) whole numbers to 1,000; simple fractions less than or equal to one (e.g., halves, thirds, fourths), represented pictorially

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics in meaningful ways by showing:

MA-3-1.3.1 How to order simple fractions represented pictorially (e.g., halves, thirds, fourths); decimals (related to money); whole numbers (up to 1,000)
MA-3-1.3.2 How the zero property of multiplication, commutative property of addition/multiplication, and identity property of addition and multiplication are used in computation
MA-3-1.3.3 How the base 10 number system (numbers to 1,000) relates to place value (e.g., ten ones make one ten)

Geometry/Measurement

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-3-2.1.1 Basic geometric elements and terms including sides, edges, faces, vertices and angles
MA-3-2.1.2 Basic two-dimensional shapes including circles, triangles, squares, rectangles, trapezoids, rhombuses and hexagons
MA-3-2.1.3 Basic three-dimensional shapes including spheres, cones, cylinders, pyramids, and cubes
MA-3-2.1.4 Symmetry and similar figure
MA-3-2.1.5 Nonstandard and standard (U.S. customary, metric) units of measurement to include length (in., cm.), time, money, temperature (Fahrenheit) and weight (oz., lb.)

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to:

MA-3-2.2.1 Sort objects and compare attributes by shape, size and color
MA-3-2.2.2 Use symmetry to construct a simple geometric design with one line of symmetry
MA-3-2.2.3 Not assessed
MA-3-2.2.4 Identify basic three-dimensional shapes by appearance to include spheres, cones, cylinders, pyramids and cubes
MA-3-2.2.5 Use nonstandard and standard units to measure weight, length, and perimeter
MA-3-2.2.6 Use standard units to measure money, time, and temperature (above zero)
MA-3-2.2.7 Choose appropriate tools (e.g., thermometer, scales, balances, clock, ruler) for specific measurement tasks
MA-3-2.2.8 Identify measurable attributes of an object (length – in., cm; weight – oz., lb.) and make an estimate using appropriate units of measurement
MA-3-2.2.9 Use measurements to describe and compare attributes of objects to include length (in., cm), width, height, money (cost), temperature (F) and weight (oz., lb.)

Relationships - Students will make connections between concepts and skills, explain how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing:

MA-3-2.3.1 How two-dimensional shapes are alike or different including circles, triangles, squares, rectangles, trapezoids, rhombuses and hexagons
MA-3-2.3.2 How three-dimensional shapes are alike or different including spheres, cones, cylinders, pyramids, and cubes
MA-3-2.3.3 How units within the same measurement system (U.S. customary or metric) are related (money, time, weight – oz., lbs.; length – in., feet)
MA-3-2.3.4 How a single line of symmetry relates to the shape

Probability/Statistics

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-3-3.1.1 Range (least and greatest values) and mode of a set of data
MA-3-3.1.2 Probability of unlikely and likely events
MA-3-3.1.3 The process of using data to answer questions (e.g., collect, organize and interpret data to answer questions)

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to*:*

MA-3-3.2.1 Not assessed
MA-3-3.2.2 Describe data when given in drawings, tables, and charts
MA-3-3.2.3 Interpret displays of data (e.g., bar graph, pictograph, line plot, two-circle Venn diagrams, tables)
MA-3-3.2.4 Interpret circle graphs with two or three sectors/sections
MA-3-3.2.5 Draw conclusions from data displayed in 3.2.3
MA-3-3.2.6 Find mode, and range of a set of data
MA-3-3.2.7 Not assessed
MA-3-3.2.8 Not assessed

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing:

MA-3-3.3.1 Not assessed
MA-3-3.3.2 Not assessed
MA-3-3.3.3 Not assessed

Algebraic Thinking

Concepts - Students will describe properties of, define, give examples of, and apply to both real-world and mathematical situations:

MA-3-4.1.1 Functions (input-output) through pictures and words
MA-3-4.1.2 Simple number sentences with a missing value in a simple mathematical expression
MA-3-4.1.3 A positive coordinate system of graphing using ordered pairs

Skills - Students will perform mathematical operations and procedures accurately and efficiently, explain how the skills work in real-world or mathematical situations, and are able to*:*

MA-3-4.2.1 Extends simple patterns (e.g., 2,4,6,8; O△△O…)
MA-3-4.2.2 Use tables to analyze simple patterns
MA-3-4.2.3 Find solutions to number sentences with a missing value (e.g., 2 + □ = 7, □ < 6)
MA-3-4.2.4 Locate whole numbers on a number line
MA-3-4.2.5 Identify locations/positions on a positive coordinate grid (e.g., pictoral representations such as a simple map)

Relationships - Students will make connections between concepts and skills, show how connections are made, explain why procedures work, and/or make generalizations about mathematics by showing*:*

MA-3-4.3.1 Not assessed
MA-3-4.3.2 Not assessed